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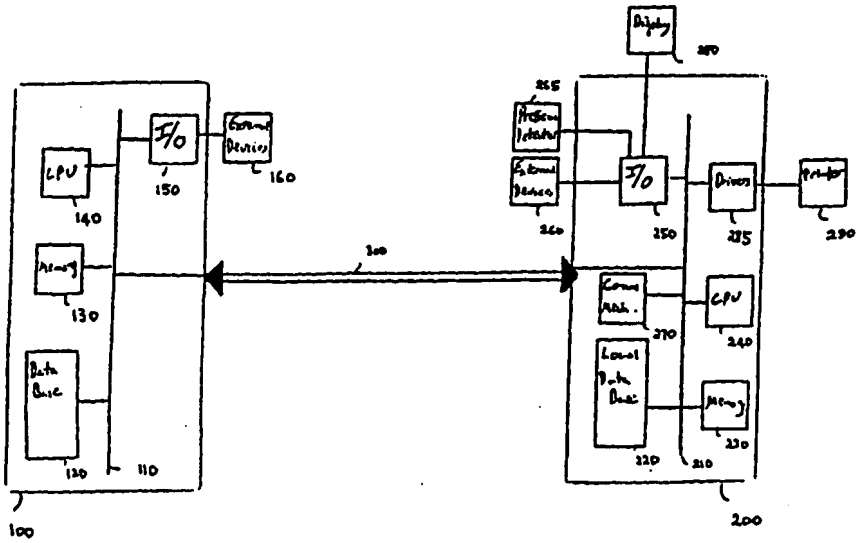

(57) Abstract

A computer-based system and method for distributing advertisements in advertisement data with application software is disclosed. This system and method keep track of which advertisements have been displayed and keep an accounting of this information for ultimately reporting to an advertiser who pays a fee for the advertisement to be displayed on the application software. A communication mechanism is included in the application software for communicating with a remote terminal, in selected configurations, in order to update the advertisements displayed in the application software, and to keep track of the activity within the database. The advertisement information, as well as the advertisers themselves, are tracked in both a local database, at a user terminal, as well as a centrally located master terminal that includes a master database of all candidate advertisers, and advertisements to be displayed.

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COMPUTER-BASED SYSTEM AND METHOD FOR DELIVERING AND TRACKING ADVERTISEMENTS

Related Applications

This application claims priority to Provisional Application No. 60/133,031 filed on May 7, 1999, the entire subject matter of which is incorporated by reference herein.

Field of the Invention

The present invention is directed to methods and apparatuses for delivering advertisements to end users of computer-based systems, and more particularly to a method and apparatus for delivering advertisements by way of application software that is executed on a user terminal.

Background

Traditionally, software has been purchased through established distribution channels which included stores, catalog and online over the Internet. A not so insignificant number of people have also, unfortunately, obtained software that has been "pirated"; that is, unlicensed software which has been copied without authorization from or without compensation to the software manufacturer. Software manufacturers attempted to limit unauthorized copying by embedding anti-copying mechanisms in the software product. However, the anti-copying mechanisms were routinely defeated by the software "pirates". These mechanisms also were viewed by legitimate, licensed users as making it more difficult to use the software in a convenient manner. As a result, most manufacturers removed the anti-copying mechanisms from their software product.

Software piracy is a significant source of lost revenue which amounts to several billion dollars annually worldwide. Software revenues are affected by the fact that developers are often hesitant to compete against an established product if that product is the "standard". This has the result of reducing competition and/or innovation. The barrier to entry in the software market for new software companies can be significant because the companies are at risk of losing control of their product if they make the software too accessible when trying to market it; on the other hand, if the software is not widely visible, there is a very small chance of that software becoming popular. One suboptimal approach to solving the problem of marketing a new software product while maintaining control of the product is to release "demo versions". A demo version is generally a permanently crippled or time-limited product that does not provide the total user

experience that might ultimately cause an end user to not purchase the software product. It also leads to a source of frustration for end users evaluating the software due to its limitations. A further problem with demo versions is that customer support is generally not available, thereby further limiting the effectiveness of the crippled product.

From a buyer's perspective there has been an explosion of software titles and software manufacturing firms that make the new titles. With so many products to choose from, the consumer has a difficult time shopping for different software titles. Due to "shrink-wrap licenses", users are often are not able to try a demonstration copy of the software prior to purchase. Therefore, users do not have a good feel for the capabilities and attributes of a software package under consideration for purchase as the potential purchaser did not have an opportunity to fully use the product. Since users cannot buy every product, they usually have insufficient time to evaluate all of the interesting features of the product, and make a purchasing decision after having mastered one or two features of the software.

From a producer's perspective, as stated above, software piracy has lead to an increasing loss of revenue which amounts to several billion dollars annually. In part, this loss of revenue is due to developers' hesitation in attempting to compete against an established product, if that product is, in fact, is recognized as the "standard" by others.

As recognized by the inventors of the present invention, an attribute of "software piracy" is that the pirates themselves act as effective distributors of the software. Thus, more potential consumers are exposed to the software that is marketed. What is lacking, however, is a monetary, accountability channel by which revenue can be received from unauthorized users of the software, or a commitment from the unauthorized users to eventually purchase the software. Furthermore, a limitation with a conventional software product, is that once the user selects the software product, little else is learned from the user regarding what type of software the user is interested in, or other types of products that the user is interested in. A further "hidden attribute" of software piracy is that the wide-spread distribution channels made available from this improper activity is a service for which many companies are willing to pay significant sums of money for gaining an audience with the end users and thus creating an advertising or promotional opportunity.

Summary of the Invention

Accordingly, it is an object of the present invention to overcome the limitations of conventional devices and systems described above by providing a computer-based system and

method for distributing software and collecting revenues associated with displaying advertisements during execution of the software that has been distributed through various distribution channels. The invention includes a software application programming interface (API) that is usable by software developers to and is incorporated into software applications. This API permits advertisers to display advertisements on a user's computer screen, or other display mechanism, while the user is in fact using the software application. In particular embodiments, the display may be a high definition TV (HDTV) or other form of a two-way communication link. In an exemplary embodiment, the software application communicates via a communication link to a master terminal having a database which includes at least one advertisement from at least one sponsor. The master terminal monitors the accessing activity and currentness of the entries within the database. In this manner, advertisements from different candidate advertisers (or, sponsors) may be included in the application software, and displayed when the user of the software launches the application software. Furthermore, the API may include a tracking mechanism that collects statistical data regarding the user's preferences, and reports this data to a central reporting location, which may be the master terminal or another terminal.

Brief Description of the Drawings

A more complete appreciation of the present invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

FIG. 1 is a block diagram of a software distribution system according to an exemplary embodiment of the present invention;

FIG. 2 is a flowchart of a process according to the exemplary embodiment of Fig. 1;

FIG. 3 is illustrates the event flow of the ad_engine when the host calls the API according to exemplary embodiments of the present invention;

FIG. 4 is a flowchart of an advertisement display performed according to exemplary embodiments of the present invention; and

FIG. 5 is a flowchart of a master process performed according to exemplary embodiments of the present invention.

Detailed Description of the Preferred Embodiments

While the present invention is being described as a "computer based system", it should be pointed out that Applicants' invention may be implemented with equal results for set top boxes or as components of telephone, television, audio only players or other devices used for communication or display of data. Therefore, a "user terminal" becomes any means that can display video and/or audio information or other information discernible by use of the physical senses of sight, hearing, touch, smell or taste. The "master terminal" still remains a remote computer.

With reference to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figure 1 thereof, there is illustrated a software distribution system that includes a master terminal 100 that may be one or more computers connected to one another. The master terminal 100 communicates by way of a communication link 300. This link may be a dedicated communication link, public switch telephone network (PSTN), proprietary communication network, Internet link or wireless communication link, or a combination of these and other links. The master terminal 100 communicates information in a two-way, bi-directional manner over the communication link 300 to a user terminal 200. The user terminal 200 is located at the user's space, such as an office environment for home use, or, alternatively, at a kiosk in a public area or another place where the user would use both application software as well as view advertising data over the communication link 300.

The master terminal 100 includes a bus 110 that interconnects a central processing unit (CPU) 140, a memory 130 (such as RAM and ROM), an input/output (I/O)device 150, as well as a master database 120. A master terminal software application is originally stored in memory 130 and is loaded onto the CPU 140 during system start-up, and is executed on the CPU 140, either in a self-contained mode, or with the CPU 140 receiving additional instructions from the memory 130. Additionally, the CPU 140 may execute external programs through external peripheral devices 160 which may include external connections to other networks, other terminals, or simply data input devices such as disk drives, etc.

The master database 120 holds advertising information, such as advertising logos and graphics, payments made by advertisers who subscribe to the service provided by the system illustrated in Figure 1, statistics collected from users of the system illustrated in Figure 1. The master database may also contain timing information, such as when certain accesses were made and when payments were made for advertising fees by advertisers. New advertising information

is provided through external devices 160 to the master database 120 as advertising information changes from time to time and according to system operations. The master database 120 is populated with new entries from advertisers based on advertising agreements between the advertisers and the administrator of the master terminal 100. The CPU 140 has access to the files contained within the master database 120, and therefore can read and write information from the master database 120, as well as direct selected fields within the master database 120 to be transferred to the user terminal 200 by way of the communication link 300.

The user terminal 200 is a computer-based system that uses a bus 210 to interconnect several subsystems. In particular, the following devices all connect to the bus 210: a local database 220, memory 230 (RAM and/or ROM), software-based communication mechanism 270, CPU 240, I/O device 250, and device drivers 285. External devices 260 may also be connected to the I/O device 250. These devices, may for example, be peripheral devices that may communicate by way of various ports, such as a USB bus serial port, parallel port, etc. A presence detector 265 may also be connected to the I/O device 250 for sensing he presence of an individual (or, a user). The presence detector 265 may be an infrared detector, a touch sensitive connector or a motion detector of the kind that detects motion by actuation of a keyboard, mouse, joy stick or similar data input device. The motion detector device may also be a camera, a voice detector, a microphone, a heat detector , etc. The presence detector 265 may also be equipped with functionality for detecting biometric inputs provided by a face, an eye, a fingerprint, a voice or keyboard and mouse usage patterns as discerned from previously observed uses patterns. Non-biometric inputs may also be applied such as by inputting passwords.

A display 280 may be connected to the I/O device 250, for displaying information such as display screens for the application software that is run on the CPU 240, as well as displaying advertisement data on the application software, as received from the communication mechanism 270 which may receive this information from the master terminal 100. In addition, the device drivers 285 may interface via ports to auxiliary equipment, such as a printer 290. In this manner, it is possible for the user to print coupons for a certain product that is provided by advertisers who paid for advertisement data to be entered into the master database 120 and communicated to the user terminal 200, as controlled by the CPU 140 and the master terminal 100. In addition, advertisers may provide alternative means of data storage indicating the user's entitlement to benefits, such as discounts or free products based upon the user's interaction with the displayed advertisement.

The system shown in Figure 1 may use a system administrator to control information that is added to and/or removed from the master database 120. The application software used in the system requests that application or operating system developers adopt the API to access the communication mechanism 270, which may for example, be a computer-coded API contained in application software. The application software is then distributed to the user terminal 200, by any of a variety of ways (including software piracy). The communication mechanism 270 is a software code/module that is automatically installed when the consumer installs the application software. The communication mechanism 270 may also be referred to as an ad_engine 270. Alternatively, the developer may include the communication mechanism 270 (or, ad_engine 270) as a factory-installed feature. The ad_engine 270 is responsible for all communications between the local database 220 and the master terminal 100, by way of, for example, an Internet connection on the communication link 300. The ad_engine 270 is responsible for insuring that developers of software applications (as well as advertisers), whose records or information is contained in the master database 120, are credited with "impressions" when new advertisements are displayed on the user terminal 200. The ad_engine 270 also ensures when the advertisements are being properly displayed so as to avoid having hackers enter the system.

The ad_engine 270 is implemented as a DLL on Windows® computers, as an INIT on Macintosh® computers, and as a "daemon" on Unix computers. A user of the terminal 200 will experience the processing load demanded by the ad_engine 270 to a very minor extent, as the ad_engine primarily performs communication functions over the communication link 300. The ad_engine 270 also controls the administration of information as provided to the local database 220 and to the CPU 240, regarding the advertisement data displayed on the display 280, as well as the retrieval of locally stored database advertisements.

The ad_engine 270 can serve as an interface between the user terminal 200 and the master database 120 in the master terminal 100 for communicating over the communication link 300. The ad_engine 270 also maintains a local database 220 with advertisements for various advertisers. Advertisements in the local database 220 are updated over time and thus the user terminal 200 need not always communicate with the master database 120 in order to change the advertisement being displayed with the application software. Generally, the supply of advertisements, at a minimum, will be provided from the master database 120 in thirty (30) day installments. Other time frames may also be used, as well as a real-time down-load alternative which avoids the need for the local database. The ad_engine 270 also collects demographic information and sends this information back to the master database 120, regarding different

inquiries made by the user as well as the different advertisements that have been presented to the user. This information may be used at the master terminal 100 to collect statistical information which is provided to the advertisers. This creates a continuing demand for services by the advertisers, and thus a continuing stream of income to the administrator of the master terminal 100.

The ad_engine 270 maintains a display log and application record, both of which are provided back to the master database 120, so that the administrator of the master terminal 100 may determine which advertisement should be displayed at the user terminal 200, as well as which advertisements are being displayed. As previously discussed, certain coupon requests may be made by way of the ad_engine 270, by a user of the user terminal 200 to the master terminal 100. Similarly, advertising response feedback may be collected at the user terminal 200, and provided by way of the ad_engine 270 to the master terminal 100 for providing feedback to the advertisers. Advertisements may be hyper linked to web sites of the advertisers and selection of the advertisement by the user may also invoke other applications, or links to other sites and services. The ad_engine 270 is a software based mechanism which can be upgraded by downloading new versions or updates from CPU 140 for real-time updating.

The ad_engine 270 coordinates itself with the application software to ensure that the advertisement information that is displayed is controlled by the ad_engine 270. Displaying and updating of the advertisement information is the responsibility of the ad_engine 270. The ad_engine is also responsible for coordinating with the application software to determine the location where within a user interface corresponding to the application program the advertisement information is to be displayed on the display 280.

The ad_engine 270 may be configured to verify the integrity of the advertisement and verify that the advertisement has been prominently displayed while not being obscured or hindered in any manner. The application software being selected by the user communicates with the ad_engine 270, as directed by the developer guidelines to ensure proper advertising billing, developer credits and housekeeping. The advertisements are changed at intervals prescribed by and as purchased by the advertisers. This information is used to populate the database 120 at the master terminal 100. The ad_engine 270, or alternatively the CPU 140, may be configured to choose from the available advertisements stored in the local database 220 which advertisement is best suited for display based on the type of application being used in the user terminal 200. In addition, a determination is also made regarding the available advertisements to be displayed, based on the duration of use, type of prior and upcoming advertisements (such as for example, a

potato chip advertisement followed by a beverage advertisement to quench the user's thirst), demographic profile of user information, and available advertisements. Furthermore, advertising revenues may be based as a function of time, depending on "prime time" usage and may take into account such things as "how fresh" or "how tired" the user may be or how receptive the user may be to the advertisements. Thus, the dynamic allocation and control of which advertisements are displayed, may be made as a function of time, and as a function of value as perceived by the user as advertised.

The ad_engine 270 may also be configured to record user information in a specific advertisement if more information is needed. All user interests may be recorded and additional information furnished if requested, including a more detailed advertisement, for which a premium will be required as it is a pre-qualified prospect. The ad_engine 270 may be configured to display more information for a specific advertisement if the user requests as much, and access to the requested information is available. However, if the requested information is not available, then the request should be flagged for a follow-up, in a subsequent communication by the ad_engine 270 and the CPU 140, which may monitor the activities of the user terminal 200.

Regarding the printing or storage of coupons, based on user requests, the ad_engine 270 may keep an electronic log of electronic coupons that can be directed to a place of purchase where the coupons will be stored and made available to the purchaser upon presentation of a "credit card" or other type of payment mechanism. The ad_engine 270 collects statistics regarding specific advertisements, as triggered by mouse clicks, for example, regarding requests for different additional information, coupon requests, duration of viewing prior or dismissal, as measurements of interest.

The ad_engine 270 also communicates with the user or the user terminal 200 at times when the local database 220, or even the master database 120, includes advertisements which are no longer valid (perhaps because the advertisements have become stale by having been included in the database, or displayed for too long a period of time). When this event is detected, the ad_engine 270 communicates with the CPU 140, so as to receive a fresh installment of advertisements from the master database 120. The CPU 140 cooperates with the master database 120 so as to tabulate bills for advertisements provided to the user terminal 200 and displayed at the user terminal 200 according to an advertisement agreement between the advertisers and the administrator of the master terminal 100. This information may then be gathered and distributed to the advertisers based on the advertiser's specification, demographics, purchases, advertising campaigns and coupon results, for example. The CPU 140 may then use this information to

tabulate royalties payable to the respective software developers, advertisers, and any other fees due to other participants such as merchants and credit card, etc. Subsequently, the CPU 140 tabulates all the coupon information and merchant specific information requested by the user for redemption. The ad_engine 270 is required to provide compatibility with the developers' interface guidelines for seamless integration and so as to ensure proper credit for advertisements placed on the application software.

Although coupons have been discussed, the use of coupons is more than that of a simple issue of redemption. Coupons have become a major tracking record and their use in conduction with Applicants' invention may be best illustrated by an example. Two types of products may be tracked with the ad_engine 270, including consumables and durable goods. For durable goods such as a new dryer for example, one can assume that a dryer would normally be bought once in, say, five years. If the user asks for a coupon after seeing the advertisement for a new dryer, the ad_engine 270 will continue to periodically present the advertisement for the dryer to the consumer as a reminder, including an expiration notification. The coupon then becomes the tracking device indicating that the consumer has returned and/or is stored by the merchant for electronic redemption at time of purchase. The advertiser then notifies the administrator of the master terminal 100 and the master terminal 100 creates a log that the user should be ready for a new dryer again in five years and ceases advertising new dryers to that user until that time.

The advertisement of consumable goods is handled differently than advertisements for durable goods. A general discount at a local grocery store, for example, will be expected to occur on a more routine basis. When an advertisement is presented and a coupon is issued (printed or electronically entered), a reminder advertisement will continue to be displayed and if the coupon is redeemed, then confirmation of the redemption encourages the presentation of a new advertisement and subsequent coupon the following week to promote repeat business for the advertiser. If no coupon is redeemed, the advertiser may then decide to either try a different advertisement campaign or pass over the individual consumer in favor of more responsive individuals.

Coupons also help to establish a reliable demographic database, offer utility to the consumer, and document for the advertiser the effectiveness of the money spent on advertising. Coupons can also be used to select a specific resale of a product by forwarding coupon information electronically. Coupons can be printed or electronically forwarded to the reseller directly. Coupons and the redemption of coupons are also a direct link to items purchased by the consumer that allow for the ad_engine 270 to better target the consumer based upon the purchase

information. For example, if a coupon is redeemed for a new infant car seat and the demographic information agrees, advertising disposable diapers and baby food will be extremely well targeted.

Furthermore, coupons can provide immediate measurement of interest and response to the advertisement. The ad_engine 270 can then track all coupon activity and build a stronger demographic profile based upon actual buying habits of specific users. The ad_engine 270 also cooperates with the I/O 250 to play audio advertisements or hybrid audio/video advertisements or multi-media advertisements. An advertisement that includes audio would solve an industry wide problem of allowing a user to select and play top rated music or movies from an Internet-based source, while still paying royalties to the copyright holder.

Figure 2 illustrates a process flow for handling communications between the master terminal 100 and the user terminal 200. The process begins in step S1, where communication is initiated with the server (i.e., the master terminal 100). The process then proceeds to step S3, where the CPU 140 inquires whether enough advertisements are loaded into the local database 220. If the response is negative, the master database 120 loads additional entries into the local database 220 in step S5 and then the process returns to step S3. If the response to the inquiry in step S3 is affirmative, the process flows to step S7 where another inquiry is made regarding whether the user terminal 200 is being connected to the communication link 300, within a predetermined time period, say, T is less than or equal to X days where X is a predetermined time period. If the response to the inquiry in step S7 is negative, new advertisements are down-loaded in step S9 and the process proceeds to step S13. However, if the response to the inquiry in step S7 is affirmative, the process proceeds to step S11, where an advertisement is selected and displayed, and a timer is set in the ad_engine 270 to measure the length of time that the advertisement has been displayed.

The process then proceeds to step S13, where an inquiry is made as to whether the user chooses to move the displayed advertisement to another location on the display device 280. If the response to the inquiry in step S13 is affirmative, the process proceeds to step S15, where a determination is made regarding where the user would like to move the advertisement. The process then proceeds to step S17, where an inquiry is made regarding whether the advertisement has been covered, and if the advertisement has not been covered, the process proceeds to step S21. However, if the response to the inquiry in step S17 is affirmative, the process proceeds to step S19, where a credit is allocated to the advertiser, because the advertisement had been covered and the process proceeds to step S21.

In step S21, an inquiry is made regarding whether the user selects the advertisement. If the response to the inquiry in step S21 is affirmative, the process proceeds to step S23, where the information that is displayed on the display 280 is that of the designated site associated with the advertisement that was selected. This designated site may be hyper-linked back to the advertisement that was selected in step S21. After performing step S23, the process proceeds to step S25, where statistics are collected regarding the selection of the advertisement so that the information may be reported back at a master database 120. After step S25, the process proceeds to step S27.

In step S27, an inquiry is made whether a predetermined amount of time has expired from the time when the timer was set back in step S11. If the response to the inquiry is negative, the process proceeds to S13 for continued processing. However, if the time has expired, and thus the response to the inquiry in step S27 is affirmative, the process proceeds to step S29 where a report is made by the ad_engine 270 to the CPU 140 in the master terminal 100, so as to recognize that an advertisement change event has occurred.

With reference to Figure 3, the ad_engine 270 is an application that operates in the 'background' or more specifically, is an application that uses computer processor time intermittently for many brief intervals to perform tasks but is not seen by the user. The user will usually be operating a program in the 'foreground' or a program that is visible to the user. Supporting applications can call into the ad_engine's API (Figure 4). The ad_engine 270 is always running.

The ad_engine 270 preprocesses advertisements for quick display when the advertisement is requested. By spreading the preprocessing out over time, the user will not notice any slowdown in any task they may otherwise be performing or executing. The ad_engine 270 is responsible for communicating with the master database 120 any time a link to the internet or dedicated communications link is available. The ad_engine 270 is constantly checking for internet or other communications opportunities and will keep the local 220 database as updated as possible in the event that the link might not be available for days or even weeks at a time. By communicating at every available opportunity, the user will not notice any loss of internet access bandwidth.

The ad_engine 270 is constantly verifying whether any advertisement that has been displayed is still prominently displayed and recording the information into its data base 220 for quick access when the host application (i.e., executing application) calls into the API for possible advertisement updating. The advertisement verification process is performed by having asked

the host application where on the display the advertisement was to be placed and having the ad_engine 270 place the advertisement since the ad_engine 270 knows exactly where the advertisement should be. If the integrity of the advertisement has been compromised in any manner, then the advertisement cannot be recorded as being prominently displayed.

The ad_engine 270 continuously monitors for the presence of a user. Keystrokes may only come intermittently and need constant monitoring to determine what has happened over the interval during which the advertisement was displayed. Motion detection, heart beat, thermal measurement, and voice detection will also be performed at this time. It is important to note that ad_engine 270 does not act on this information until the host application request the ad_engine to do so.

Referring now to Figure 4, the host application follows the API specified by the ad_engine 270 to be a cooperating host. By calling the ad_engine 270 at periodic intervals convenient to the host, the user will not be bothered by waiting on the ad_engine to 270 display new advertisements periodically. The host application also specifies the type of advertisement and the location of the advertisement according to API guidelines and space and time available for the type of advertisement. The host application has to be as cooperative as possible to both the user and to the ad_engine 270 as revenue is directly related to the seamless integration of displayed advertisements and user experience.

The ad_engine 270 acts upon information gathered earlier in its 'background' mode when called by the host application to do so. It is at this time that new advertisements are displayed or the host may ask the ad_engine 270 to reposition the advertisement, hide the advertisement, or to display a different type of advertisement. For example, if the host application knows that the user is going to be waiting for several minutes while the host application performs another task, a full animation can be shown instead of a simple stationary display advertisement.

As illustrated in Figure 5, on a global perspective, there is a master processor interacting with a master database and the advertiser. Across a data link, such as the internet, many local processors each having a local data base are present. The local processor may be the ad_engine that communicates with a host application before a real user/audience by presenting information as audio/video. The feed back information from the audience is ultimately conveyed back to the master data base for future advertising information, demographics and advertising revenue information.

In addition to what has been described to this point, advantageous aspects of Applicants' invention may be highlighted by the following description. Applicants have disclosed a software

system that links a software application with the user of the software and an advertiser whose advertisements are displayed at any screen location (or viewed program in the set top box case or music/content in the audio only case) of the application's choosing in such a way that provides guarantees: (i) to the advertiser that the user will see the advertisement; (ii) to the software developer that a royalty is paid based on the number of times the application is launched and on the amount of time the application is used; and (iii) to the user 'free' use of competent, uninhibited software accompanied by the display of advertisements.

A key element of Applicant's system is the guarantee provided to the various entities in the development, use and sponsoring chain. The advertisers may be viewed as the sponsors of the free software. The system has the ability to monitor key strokes and mouse movements that originate from the user to ensure that the advertisement is seen by the user. This offers to the advertiser the advantage of only having to pay for advertisements displayed to actual users (or, real persons). User activity may also be monitored by the use of a camera to verify that a person is in front of the computer. The region of the user interface in which the advertisement is displayed during execution of the application software can also be analyzed to verify that the region is in fact located in the physical region of the monitor and verify that no other program or window is obscuring the advertisement. The camera may also be used to ascertain which user among a stored database of known users is viewing the advertisement. By identifying this individual, his or her advertisement profile may be determined and a targeted advertisement may be displayed. An infrared device or other biometric measuring device may also be used to assist in ensuring that a user is in the camera range. From a set top box utilizing an infrared signal, user activity may also be determined by analyzing the signals. Other means of identification may include microphones for voice and heart beat detection, proximity sensors, photo detection and other forms of motion detection.

Since the system has the ability to sense a user's presence in front of the computer, Applicant's invention facilitates a rapid and knowledgeable decision making about the type of advertisements to be displayed to the user in as well as determining the user reaction to the advertisement by monitoring mouse movement, etc. The system of Applicants' invention also knows that the advertisement has been placed on screen and that nothing has prevented the user from removing, blocking, or in any way disabling the advertisement or the database which holds the displayed advertiser and which application has used the database. This allows for a guarantee to be made to the advertiser which leads to guarantees to the developer for wide spread application support. The user is insured of quality software at no cost.

When the user wants more information related to an advertisement, more information can be forwarded to the user. In addition, instant coupons for manufacturer, distributor, or local sales promotions discounts may also be made readily available. Applicants' invention brings together a person (user), an advertiser, and a software developer/content provider where each of these entities can remain anonymous. The system offers the advertiser a demographically profiled person that is exposed to the advertisement while removing the advertiser's uncertainty about the consumer not seeing the advertisement. The software developer/content provider is relieved of the concern for software piracy and would be in a position to give software away knowing that the development efforts will be compensated directly in proportion to the consumer utility of the developed software.

Prior to Applicants' invention, compensation to a software developer/content provider based on consumer utility of the developer's product could not be known. Traditionally, developers sold their products at a price that was supposed to reflect development costs and the consumer's perception of utility. Programs that were previously viewed as low utility or possibly as entertainment were sold at a low cost resulting in much lower margins to the developer even though these programs were used for a greater number of hours. With compensation based on a duration of usage approach of Applicants' invention, the lower margins for more frequently used software is no longer a concern.

Applicants' system links advertiser, developer/content provider, and end user in a way that, through the display of demographically targeted advertisements, rewards developers for applications that a user will use time and time again by means of equitable distribution of revenue according to the application used. Previously, an advertiser did not have a demographically targeted audience for its products and consumer could not receive, direct from the software developer, at no cost, a complete and competent full functioning program that is not a demo, lite or shareware version or hindered in some other way.

Applicants' invention provides many advantages. A user does not have to be on-line continuously. Each party described above is rewarded. Compensation encourages content development. The system is targeted as a consumer product delivery system and also allows for any kind of content to be provided to users at no cost as well as being able to offset or possibly cover the cost (through advertising revenues) of providing the hardware which the user will need (computer or set top box or other dedicated equipment such as cameras, hot key enabled keyboards or simply hot key boxes).

The demographic information obtained by Applicants' invention is superior to any present information gathering system because the system of Applicants' technology is able to accumulate information on a given individual over a period of time; it is able to actually determine which user from among a group of users is using a computer. For example, in a family use computer or set top box., an acoustic microphone detecting heartbeat or voice or face recognition could be used to identify which of several potential users is the current user or viewer. The system is able to identify trends over time and through questionnaires presented to the user, the information may be very specific such as age, sex, income, interests, etc.

Consumer's use of coupons provides resellers information about the consumer. This information is provided to Applicants' invention and is used to target the consumer for related products in addition to enhancing the demographic information. For example, if a coupon is used to buy a new washing machine, targeting advertisement and coupons for laundry detergent should lead to a determination of the user's preference of laundry detergent. This information can be used to notify users of specials from competitors and provides the system an opportunity to change the consumer preference or to reinforce an existing preference.

Although software will be distributed by the system of Applicants' invention, the system also provides a novel and improved form of advertising. The advertising will be for electronic distribution of software, video and/or audio distribution of information and/or entertainment. For example, television broadcasts will be able to use Applicants' invention to distribute content to viewers across the cable or other means of content or programming delivery. In fact, computerized responses measured and verified based upon data collected at a computer terminal can be associated with other devices used by the computer user to provide follow up advertising based upon the data gathered at the computer. Thus, a tie-in is created between computer gathered data and other devices used for entertainment purposes. Applicants' invention also provides targeted advertising instead of the traditional approach of displaying one advertisement for everyone. For example, in the case of a single male household, an advertisement time slot could be better utilized with targeting advertising by displaying an advertisement for hair loss treatment instead of feminine hygiene products. The cost to advertisers would decrease since a particular advertisement is not displayed to everyone and the advertisers will not have to pay for advertisements that are not viewed. In addition, due to targeted advertising, response to the advertisement is increased.

As a novel advertising technique, advertisements for television, telemarketing, or audio may be present. As with free software, a free televised program may be provided to the user in

return for viewing advertisements. Although advertisements are currently shown on television, they are not demographically targeted with the same level of certainty of viewership as provided by Applicants' invention. Applicants' invention can present the advertisement, dynamically change it to suit the viewer and provide a higher advertising rate for the broadcaster as a result.

While advertisements are omnipresent, Applicants' invention offers more in that it both enables a path for displaying the advertisement while guaranteeing an audience. When an advertiser pays to show an advertisement on television, they assume a viewer is present. If all viewers simultaneously step out of the room, no member of the target audience has seen the advertisement. Using Applicants' invention, if the user steps out, the advertiser pays nothing because no user has seen the advertisement. As described, Applicants' invention monitors the user/viewer to detect the user/viewer's presence in addition to detecting the viewer's advertisement preferences.

As detailed above, an (not the only one, however) essential aspect of Applicants' invention is the ability to guarantee that the targeted audience was available to have actually seen the advertisement. Since the system guarantees an advertiser a viewer for its advertisement, no payment is expected for advertisements that have not been viewed. Similarly, the system of Applicants' invention guarantees a viewer on the computer by monitoring keyboard and mouse activity while the advertisements are displayed, as well as making provisions for the use of video monitoring, audio inputs for such items as voice detection and acoustic listening for heartbeats. These alternate monitoring methods enable the use of Applicants' invention for a television based set top box to surpass current advertising methods. The system can also be used to detect user interest in a product or assumptions of a consumer's needs. For example, if a consumer is using coupons for disposable diapers on a regular bases, targeting this consumer for baby food would be a logical conclusion.

On the computer, the consumer interest can be gauged by allowing a 'click through' for more information upon the users clicking of the mouse on the advertisement for more information. The system of Applicants' invention can then be used to register this as a consumer interest for future data storage and analysis. On both the computer and set top box (television connections), feedback can be communicated by special hardware channels that provide a 'hot' button for the user to register a request for more information or register an interest for a certain product or service by registering for a coupon.

Coupons can then be printed by the user or electronically forwarded to the reseller for instant credit by the consumer. This eliminates a step for the user of having to print the coupon

and carrying it with him or her when a trip to purchase the product is made. A reseller of a product can receive the electronically forwarded coupon, acknowledge the user's interest in the product and continue to track and target the user/consumer until such purchase is made.

The processes set forth in the present description may be implemented using a conventional general purpose microprocessor programmed according to the teachings of the present specification, as will be appreciated to those skilled in the relevant arts. Appropriate software coding may be readily prepared by skilled programmers based on the teachings of the present disclosure, as will be apparent to those skilled in the relevant arts.

The present invention thus also includes a computer-based product, which may be hosted on a storage medium and include instructions that can be used to program a computer to perform a process in accordance with the present invention. The storage medium can include, but is not limited to, any type of disk, CD ROMS, magneto-optical disks, ROMs, RAMS, EEPROMs, EEPROMs, flash memory, magnetic or optical cards, or any type of media suitable for storing electronic instructions.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

CLAIMS

1. A computer-based method for providing advertising, said method comprising the steps of:

executing an application software by a user;

periodically communicating a plurality of parameters by said software to a remote device during execution;

providing at least one advertisement by said remote device to the software for display to the user; and

displaying said advertisements to the user on a user interface, wherein said software includes a communication mechanism.

2. The method of claim 1, wherein said communication mechanism is a computer coded application program interface (API).

3. The method of claim 1, wherein the parameters include an amount of memory available for the advertisement.

4. The method of claim 1, wherein the parameters include identification of an area of the user interface where the advertisement will be displayed to the user.

5. The method of claim 1, wherein the parameters includes a length of time in which the advertisement will be displayed to the user.

6. The method of claim 1, wherein said remote device is a server.

7. The method of claim 1, wherein the remote device comprises:

a central processing unit (CPU);

a memory;

a data base; and

an input/output device; and

an external peripheral device.

8. The method of claim 7, wherein the data base has at least one multi-media advertisement for at least one subscribing sponsor stored therein.

9. The method of claim 8, wherein the advertisement in the data base is updated after a predetermined period of time.

10. The method of claim 9, wherein the update is performed by loading a new advertisement from the external peripheral device.

11. A computer-based method for collecting revenue from a display of advertisements, said method comprising the steps of:

executing an application software by a user, said software including a communication mechanism;

periodically communicating a plurality of parameters by said software to a remote device during execution;

providing at least one advertisement by said remote device to the software for display to the user;

displaying said advertisement;

allocating a fee by the remote device for displaying said advertisement; and

collecting the fee from sponsors of the advertisement.

12. The method of claim 11, wherein said advertisement is displayed to the user at a user terminal.

13. The method of claim 11, wherein the remote device comprises a database.

14. The method of claim 13, wherein the database comprises at least one multi-media advertisement for at least one subscribing sponsor.

15. The method of claim 14, wherein the advertisement is changed at a pre-determined time interval.

16. The method of claim 15, wherein the remote device monitors the accessing of the advertisement by the application program.

17. The method of claim 11, wherein the fee is determined based on a plurality of factors indicative of an exposure of an advertisement to said user.

18. The method of claim 17, wherein said exposure comprises a length of time during which the advertisement is displayed to the user.

19. The method of claim 17, wherein said exposure comprises a number of times the advertisement is displayed to the user.

20. The method of claim 11, wherein the application software is provided to the user free of charge.

21. A computer-based method for collecting revenue from a display of advertisements, said method comprising the steps of:

executing an application software by a user, said software including a communication mechanism;

periodically communicating a plurality of parameters by said software to a remote device during execution;

providing at least one multi-media advertisement by said remote device to the software for display to the user;

displaying said advertisement to the user on an user interface;

determining a level of exposure of said advertisement to the user;

allocating a fee for displaying the advertisement based on a level of exposure to the user; and

collecting the fee from a sponsor of the advertisement.

22. The method of claim 21, wherein said communication mechanism maintains a log of activities attributable to the user.

23. The method of claim 22, wherein said attributes comprise inquiries made by the user.

24. The method of claim 21, wherein said communication mechanism displays the advertisement on a user interface in an unobstructed manner.

25. The method of claim 21, wherein said communication mechanism elicits information from the user.

26. The method of claim 25, wherein said user information includes user preferences.

27. The method of claim 26, wherein a fee to be charged a sponsor of an advertisement is based on an amount of user information collected by the communication mechanism.

28. The method of claim 26, wherein a fee to be charged a sponsor of an advertisement is based on a type of user information collected by the communication mechanism.

29. The method of claim 20, wherein said remote device comprises a database in which the advertisement is stored.

30. The method of claim 29, wherein said advertisement is updated periodically.

31. The method of claim 21, wherein said exposure includes monitoring a presence of the user within a predetermined area of the user interface.

32. The method of claim 21, wherein said exposure includes monitoring a frequency of user actuation of an input device connected to the user interface.

33. A computer-based method for collecting revenue from a display of advertisements, said method comprising the steps of:

executing an application software by a user, said software including a communication mechanism;

periodically communicating a plurality of parameters by said software to a remote device during execution;

providing at least one multi-media advertisement by said remote device to the software for display to the user;

displaying said advertisement to the user;

monitoring a reaction of said user to the displayed advertisement;

allocating a fee for displaying the advertisement based on the user reaction; and

collecting the fee from a sponsor of the advertisement.

34. The method of claim 33, wherein said reaction includes an actuation of an input device.

35. The method of claim 34, wherein said input device comprises at least one of a keyboard and a mouse.

36. The method of claim 33, wherein said reaction includes an execution of a command.

37. A computer-based method for collecting revenue from a display of advertisements, said method comprising the steps of:

executing an application software by a user, said software including a communication mechanism;

periodically communicating a plurality of parameters by said software to a database during execution;

providing at least one multi-media advertisement by said database to the software for presentation to the user;

displaying said advertisement to the user;

determining a level of exposure of said advertisement to the user;

allocating a fee for displaying the advertisement based on a level of exposure to the user; and

collecting the fee from a sponsor of the advertisement.

38. The method of claim 37, wherein the database is connected to a computer on which said application software is executing.

39. The method of claim 38, wherein the database has at least one multi-media advertisement from at least one subscribing sponsor stored therein.

40. The method of claim 39, wherein the advertisement in the database is updated periodically.

41. The method of claim 40, wherein the update is performed by loading the database with advertisements from a remote database.

42. A computer-based method for compensating a software developer, said method comprising the steps of:

executing an application software by a user, the software including a communication mechanism and wherein the software is developed by a software developer;

periodically communicating a plurality of parameters by said software to a remote device during execution;

providing at least one advertisement by said remote device to the software for presentation to the user;

displaying said advertisement to the user;

determining a level of exposure of said advertisement to the user;

allocating a fee for displaying the advertisement based on a level of exposure to the user;

collecting the fee from a sponsor of the advertisement; and

compensating the software developer based on the fee collected from the sponsor.

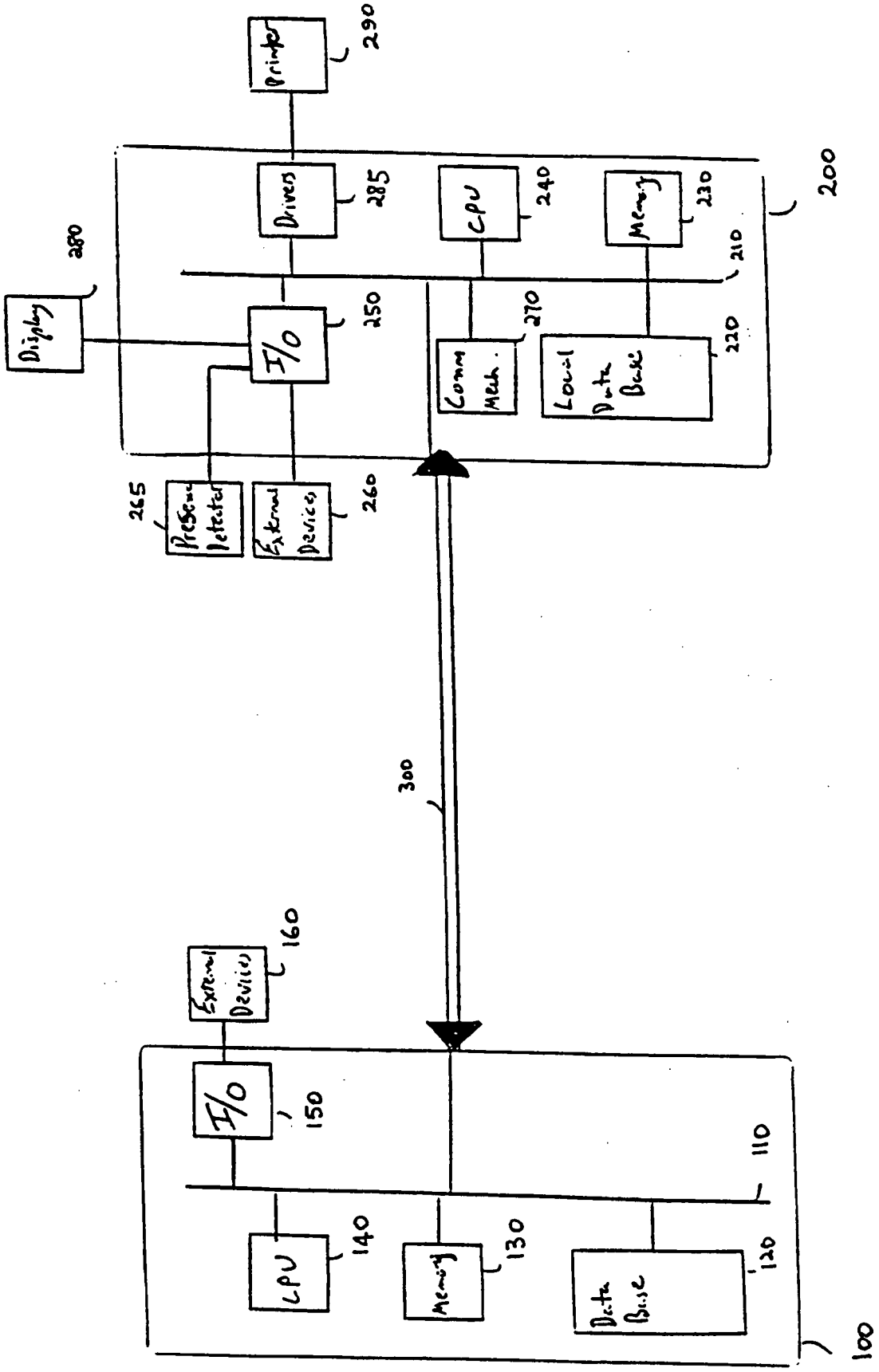

Printer
290
Drivers
285
CPU
240
Memory
230
200
280
Display
I/O
250
210
270
Comm Mech.
Local Data Base
220
265
Presence Detector
External Devices
260
300
External Devices
160
I/O
150
110
CPU
140
Memory
130
Data Base
120
100

Fig. 1

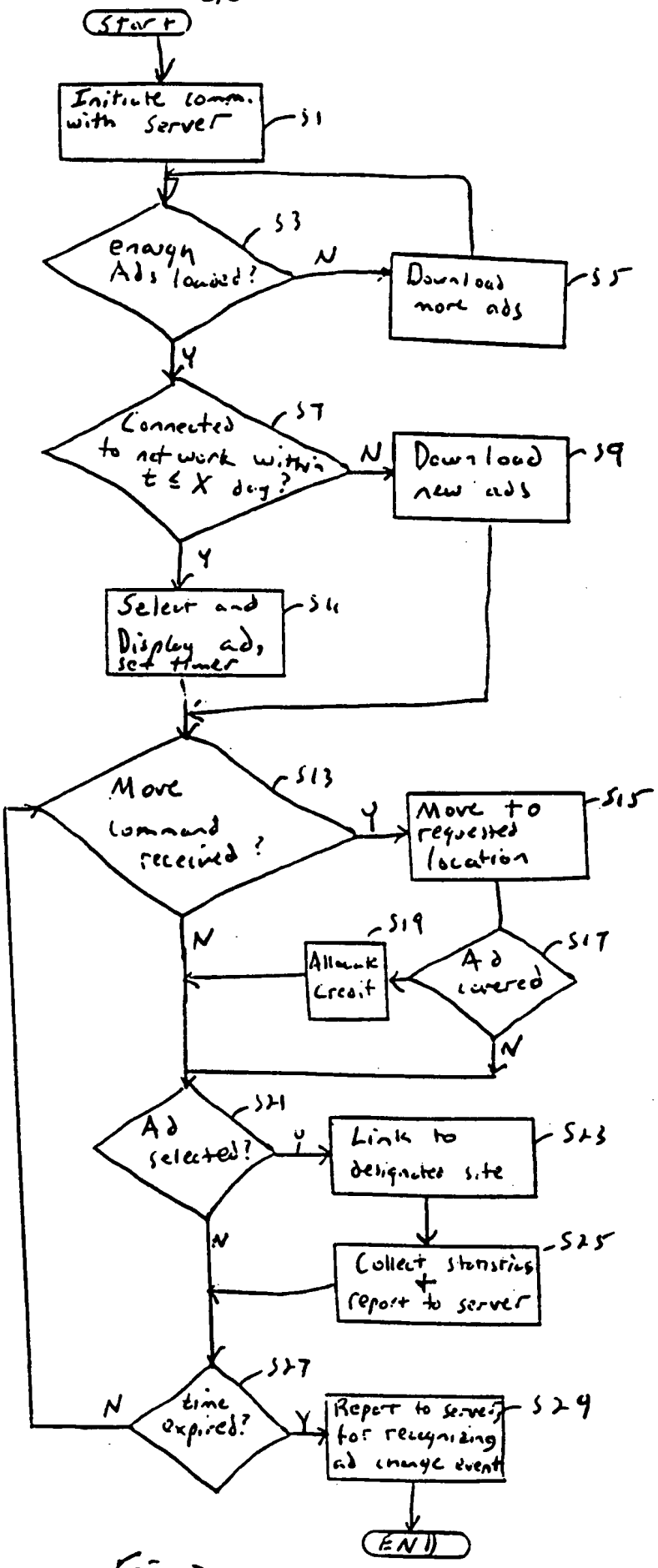
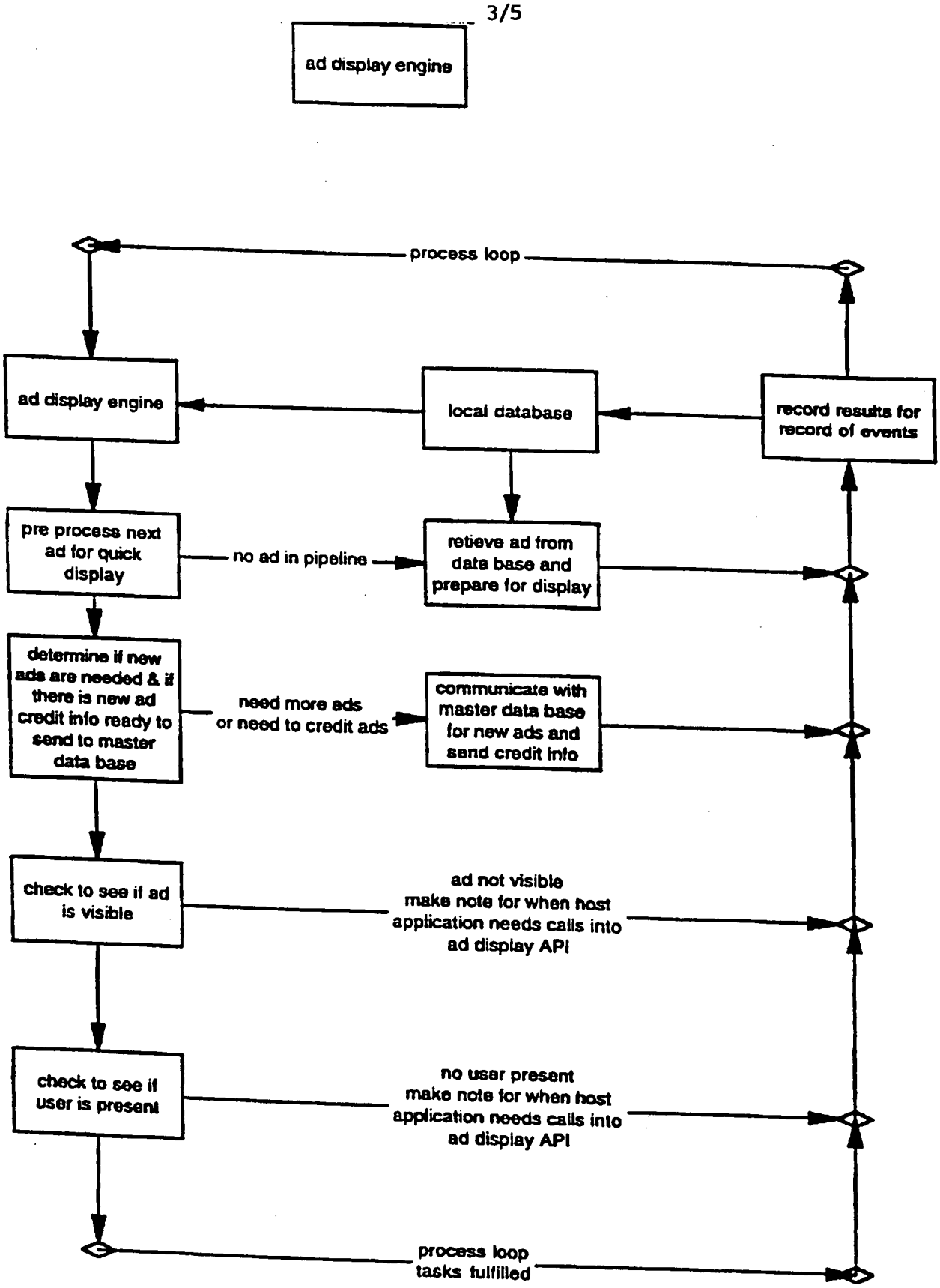

Start
Initiate comm. with server
S1
enough Ads loaded?
S3
N
Download more ads
S5
Y
Connected to network within t ≤ X day?
S7
N
Download new ads
S9
Y
Select and Display ad, set timer
S11
Move command received?
S13
Y
Move to requested location
S15
N
Ad covered
S17
Allocate Credit
S19
N
Ad selected?
S21
Y
Link to designated site
S23
N
Collect statistics + report to server
S25
time expired?
S27
N
Report to server for recognizing ad change event
S29
Y
END

Fig 2.


ad display engine
process loop
ad display engine
local database
record results for record of events
pre process next ad for quick display
no ad in pipeline
retieve ad from data base and prepare for display
determine if new ads are needed & if there is new ad credit info ready to send to master data base
need more ads or need to credit ads
communicate with master data base for new ads and send credit info
check to see if ad is visible
ad not visible make note for when host application needs calls into ad display API
check to see if user is present
no user present make note for when host application needs calls into ad display API
process loop tasks fulfilled

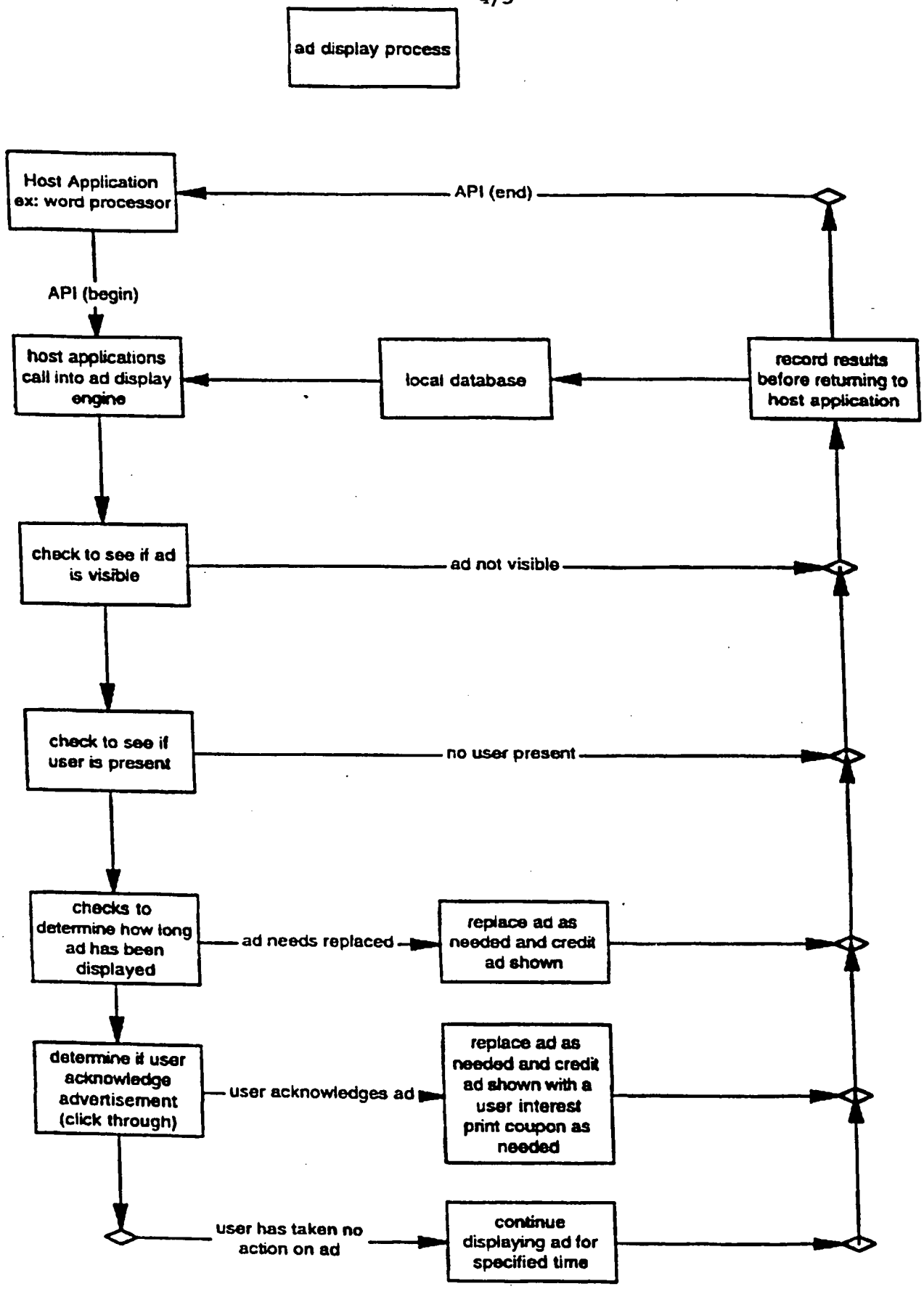
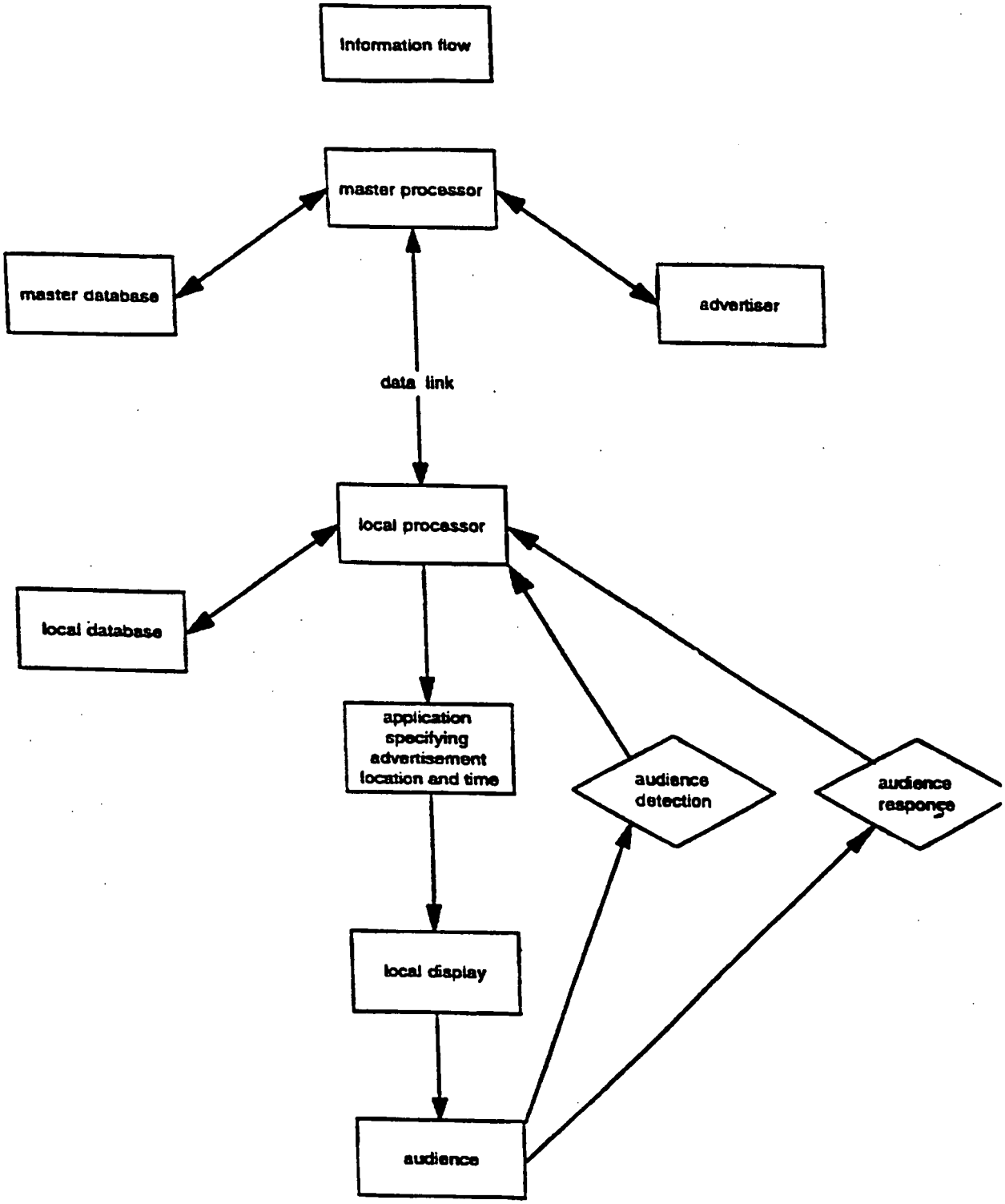

ad display process
Host Application ex: word processor
API (end)
API (begin)
host applications call into ad display engine
local database
record results before returning to host application
check to see if ad is visible
ad not visible
check to see if user is present
no user present
checks to determine how long ad has been displayed
ad needs replaced
replace ad as needed and credit ad shown
determine if user acknowledge advertisement (click through)
user acknowledges ad
replace ad as needed and credit ad shown with a user interest print coupon as needed
user has taken no action on ad
continue displaying ad for specified time

FIGURE 5


information flow
master processor
master database
advertiser
data link
local processor
local database
application specifying advertisement location and time
audience detection
audience response
local display
audience